REMARKS

Claims 1-22 are currently pending in the application. By this Amendment, claims 1, 3, 6, 7, 10, and 14-18 have been amended; and new claims 19-22 have been added. Applicants respectfully request reconsideration of the present claims in view of the foregoing amendments and the following remarks.

I. Claim Rejections under 35 U.S.C. §103(a)

Rejection of Claims 1-2 and 6-18 Under 35 U.S.C. §103(a) in View of Hetherington

Claims 1-2 and 6-18 are rejected under 35 U.S.C. §103(a) as being obvious over U.S. Patent No. 6,411,948 to Hetherington et al. (hereinafter "Hetherington"). This rejection is respectfully traversed.

Applicants' claimed invention as embodied in independent claim 1 is drawn to a method of checking a sequence of input characters according to one or more rules of a selected language, wherein the method comprises, *inter alia*, the steps of (1) receiving a first character, (2) determining whether the first character may begin a valid sequence of characters according to the rules associated with the selected language, (3) if the first character may begin a valid sequence of characters according to rules associated with the selected language, accepting the first character for display, and (4) if the first character may not begin a valid sequence of characters according to rules associated with the selected language, prohibiting accepting the first character for display.

Applicants' claimed invention as embodied in independent claim 14 is drawn to a computer-readable medium on which is stored a computer program for checking a sequence of input characters according to one or more rules of a selected language, wherein the computer program comprises instructions, which when executed by a computer, perform, *inter alia*, the steps of (1) receiving a character, (2) determining whether the character may be appended to a previous character to form a sequence of characters according to rules associated with the selected language, (3) if the character may be appended to the previous character according to the rules associated with the selected language, appending the character to the previous character

to form a sequence or characters according to the rules associated with the selected language, and (4) if the character may not be appended to the previous character according to the rules associated with the selected language, prohibiting appending the character to the previous character.

Applicants' claimed invention embodied in independent claim 16 is drawn to a method of checking a sequence of input characters according to one or more rules of a selected language comprising, *inter alia,* the steps of (1) if the character is associated with the selected language, determining whether the character may be displayed as a single character according to the rules of the selected language, (2) if the character may not be displayed as a single character according to the rules of the selected language, determining whether the character may be appended to one or more additional characters to form a valid sequence of characters according to the rules of the selected language, and (3) if the character may not be appended to one or more additional characters to form a valid sequence of characters, discarding the character.

Applicants' claimed invention as embodied in independent claim 17, is drawn to a method of establishing a sequence validation context of a sequence of characters comprising a complex character, comprising, *inter alia*, the steps of (1) determining a maximum number of characters that may comprise a valid sequence of characters according to the rules of a selected language, (2) beginning with a last simple character of a sequence of characters, determining whether the last character is valid as a complete sequence of characters comprising a complex character, (3) if the last character of the sequence of characters is valid as a complete sequence of characters comprising a complex character, then returning a context of the last character as a context for a complex character, (4) if the last character of the sequence of characters is not valid as a complete sequence of characters comprising a complex character, then determining whether a combination of the last character and a character input immediately to the left of the last character is valid as a complete sequence of characters comprising a complex character, (5) if the combination of the last character and the character input immediately to the left of the last character is valid as a complete sequence of characters comprising a complex character, then returning a context for the combination as the context for a complex character, (6) if the

combination is not valid as a complete sequence of characters comprising the complex character, then determining whether the combination combined with a next character to the left of the combination is valid as a complete sequence of characters comprising a complex character, and if not, then creating subsequent combinations of characters by adding one character at a time to the left of the last subsequent combination until the maximum number of characters that may comprise a valid sequence have been combined to form a sequence of characters that may be checked for validity as a complete sequence of characters comprising a complex character, and (7) if any one of the subsequent combinations of characters are valid as a complete sequence of characters comprising a complex character according to the rules of the selected language, then returning a context for the one subsequent combination as the context for a complex character.

Applicants' claimed invention as embodied in independent claim 18 is drawn to a system for checking a sequence of input characters according to one or more rules of a selected language, comprising, *inter alia*, a computer program module operative (1) to receive a first character, (2) to receive a second character, and (3) to prohibit appending the second character to the first character if the second character may not be appended to the first character according to the rules associated with the selected language.

Applicants' independent claims described above are directed to a method, a computer-readable medium capable of performing a method, and a system comprising a computer program module for performing a method, wherein the method comprises automatically checking/validating a sequence of characters as each new character is inputted by a user into the sequence. The method automatically initiates one or more validation steps after the input of each new character. The validation steps may include: (1) determining whether the character may be appended to a previous character to form a sequence of characters according to rules associated with the selected language, (2) if the character may not be appended to the previous character according to the rules associated with the selected language, prohibiting appending the character to the previous character, and (3) if the character may not be appended to one or more additional characters to form a valid sequence of characters, discarding the character.

Hetherington discloses a method of converting inputted text into a syllabary symbol or ideograph, wherein the inputted text comprises a text string in a first language (e.g. English) that represents a phonetic construction of the syllabary symbol or ideograph of a second language (e.g. Japanese). As a user inputs each letter of the phonetic construction, a display of the inputted text string and the corresponding syllabary symbol/ideograph, or portion thereof, is provided to the user. Once the inputted text corresponds to a phonetic spelling of the syllabary symbol or ideograph, the user is provided with a list of possible syllabary symbols or ideographs to choose from. The user chooses a selected syllabary symbol or ideograph from the displayed list to be inputted into a document.

Beginning in column 15, line 25, Hetherington describes the required data input by a user in methods involving Japanese and similar logosyllabic languages. In lines 34-40, Hetherington specifically discloses

> **Any character entry should be in latin alphabet characters, even for logosyllabic languages**. As noted earlier, data input for such languages is accomplished phonetically utilizing combinations of latin alphabet characters to select symbols from phonetic syllabaries, with a dictionary lookup for the final ideograph. (emphasis added)

As disclosed in Hetherington, a user inputs latin alphabet characters, which relate phonetically to a complex character in the Japanese language and similar logosyllabic languages. The inputted latin alphabet characters are translated into components of a complex character in the Japanese language and similar logosyllabic languages. In contrast, in the present invention, a user inputs simple characters of a select language, typically a language other than those utilizing latin alphabet characters, wherein the simple characters are actual components in a sequence of characters used to form a complex character. For example, in the present invention, a user inputs the actual simple characters of the Japanese language (or other logosyllabic language), as oppose to latin alphabet characters.

Further, the teaching of Hetherington fails to teach or suggest a method of inputting simple characters of a selected language wherein entry of each simple character triggers a method step wherein a determination is made (1) whether or not the inputted simple

character can be a first simple character in the formation of a valid sequence representing a complex character; (2) whether or not the inputted simple character can be placed to the right of an existing sequence of simple characters in the formation of a complex character; (3) whether or not the inputted simple character and any additional simple characters in a sequence of simple characters forms a complex character; and (4) whether or not the inputted simple character in combination with other simple characters in a sequence of simple characters equals a maximum number of simple characters for forming a complex character.

In addition to the above-noted deficiencies in the teaching of Hetherington, the teaching of Hetherington fails to teach or suggest at least the following features of the Applicants' independent claims 1, 14, and 16-18:

(1) a method of checking a sequence of input characters according to one or more rules of a selected language comprising a step of determining whether a first character may begin a valid sequence of characters according to the rules associated with the selected language (claim 1);

(2) a method of checking a sequence of input characters according to one or more rules of a selected language comprising a step of prohibiting accepting a first character for display if the first character may not begin a valid sequence of characters according to rules associated with the selected language (claim 1);

(3) a method of checking a sequence of input characters according to one or more rules of a selected language comprising a step of accepting a first character for display if the first character may begin a valid sequence of characters according to rules associated with the selected language (claim 1);

(4) a computer-readable medium on which is stored a computer program for checking a sequence of input characters according to one or more rules of a selected language, wherein the computer program comprises instructions, which when executed by a computer, perform the step of prohibiting appending a character to a previous character if the character may not be appended to the previous character according to the rules associated with the selected language (claim 14);

(5) a method of checking a sequence of input characters according to one or more rules of a selected language, comprising the step of determining whether a character may be displayed as a single character according to the rules of the selected language if the character is associated with the selected language (claim 16);

(6) a method of checking a sequence of input characters according to one or more rules of a selected language, comprising the step of discarding a character if the character may not be appended to one or more additional characters to form a valid sequence of characters (claim 16);

(7) a method of establishing a sequence validation context of a sequence of characters comprising a complex character, wherein the method comprises the step of determining the maximum number of characters that may comprise a valid sequence of characters according to the rules of a selected language (claim 17);

(8) a method of establishing a sequence validation context of a sequence of characters comprising a complex character, wherein the method comprises the step of beginning with a last simple character of a sequence of characters, determining whether the last character is valid as a complete sequence of characters comprising a complex character (claim 17);

(9) a method of establishing a sequence validation context of a sequence of characters comprising a complex character, wherein the method comprises the step of returning a context of a last character as a context for a complex character if the last character of the sequence of characters is valid as a complete sequence of characters comprising a complex character (claim 17);

(10) a method of establishing a sequence validation context of a sequence of characters comprising a complex character, wherein the method comprises the step of determining whether a combination of a last character and a character input immediately to the left of the last character is valid as a complete sequence of characters comprising a complex character if a last character alone of a sequence of characters is not valid as a complete sequence of characters (claim 17);

(11) a method of establishing a sequence validation context of a sequence of characters comprising a complex character, wherein the method comprises the step of returning a context for a combination of a last character and a character input immediately to the left of the last character as a context for a complex character if the combination of the last character and the character input immediately to the left of the last character is valid as a complete sequence of characters comprising a complex character (claim 17);

(12) a method of establishing a sequence validation context of a sequence of characters comprising a complex character, wherein the method comprises the step of determining whether a subsequent combination comprising a previous combination combined with the next character to the left of the combination is valid as a complete sequence of characters comprising a complex character, and if not, then creating subsequent combinations of characters by adding one character at a time to the left of the last subsequent combination until the maximum number of characters that may comprise a valid sequence have been combined to form a sequence of characters that may be checked for validity as a complete sequence of characters comprising a complex character if the previous combination is not valid as a complete sequence of characters comprising the complex character (claim 17);

(13) a method of establishing a sequence validation context of a sequence of characters comprising a complex character, wherein the method comprises the step of returning a context for one subsequent combination as a context for a complex character if any one of the subsequent combinations of characters is valid as a complete sequence of characters comprising a complex character according to the rules of the selected language (claim 17); and

(14) a system comprising a computer program module operative to prohibit appending a second character to a first character if the second character may not be appended to the first character according to rules associated with a selected language (claim 18).

The Office Action states,

> Hetherington's invention displays the corresponding character in the display...It would have been obvious to one of ordinary skill in the art at the time of the invention to prohibit the display of the first character altogether if it did not begin a valid sequence of characters according to language rules, as Hetherington's invention recognizes that a character may not be valid, but takes into account similarly pronounced characters. (Office Action, page 2, line 25 to page 3, line 4).

As note above, in Applicants' claimed invention a determination is made as to whether a first simple character may begin a valid sequence of simple characters. Even if the teaching of Hetherington recognizes that a character may not be valid, the teaching of Hetherington still fails to determine whether the character may begin a valid sequence of simple characters in the formation of a complex character.

Further, the teaching of Hetherington does not prevent the display of erroneously inputted characters. The teaching of Hetherington displays invalid characters and permits them to become part of an altString, which together with subsequent phonetic character entries are evaluated for syllabary mapping (Column 15, lines 45-50). Consequently, the teaching of Hetherington further teaches away from Applicants' invention, which only permits valid simple characters to become part of a display and part of a sequence of inputted simple characters to be checked according to one or more rules of a selected language.

The Office Action states that in the teaching of Hetherington if the character is not a valid character of the language, the input method editor will display the character (Office Action page 4, lines 17-18). The display of the character is not conditional on a validity analysis in Hetherington. In the Applicants' invention, if the character may not begin a valid sequence the display of the character is automatically prohibited. Even if it were obvious for one of ordinary skill in the art to prohibit the display of the first character as suggested by the Office Action, such an allegedly obvious prohibition could not take place since Hetherington does not evaluate whether a character may begin a valid sequence. Hetherington does not teach or

suggest conditional display of the first character based on the characters validity to begin a valid sequence.

Given that the teaching of Hetherington fails to teach or suggest the above-mentioned features of Applicants' claimed invention as recited in Applicants' independent claims 1, 14, 16, 17 and 18, the teaching of Hetherington cannot make obvious Applicants' independent claims 1, 14, 16, 17 and 18. Since claims 2, 6-13 and 15 depend from independent claims 1 and 14, and recite additional claim features, the teaching of Hetherington cannot make obvious claims 2, 6-13 and 15. Accordingly, Applicants respectfully request withdrawal of this rejection.

Rejection of Claims 3-5 Under 35 U.S.C. §103(a) in View of Hetherington In Combination With Hetherington2

Claims 3-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hetherington in view of U.S. Patent No. 6,272,495 to Hetherington (hereinafter "Hetherington2"). This rejection is respectfully traversed.

Applicants' claims 3-5 are directed to the method of independent claim 1, wherein a state transition table is utilized in the determination of whether a new character can be associated with an existing sequence of characters according to one or more rules of a selected language. A description of Applicants' claimed invention as embodied in independent claims 1, and a description of the teaching of Hetherington may be relied upon above.

In addition to the above-noted deficiencies in the teaching of Hetherington discussed above, the teaching of Hetherington also fails to teach or suggest the use of state transition tables as recited in Applicants' claims 3-5. The Office Action acknowledges that Hetherington fails to teach or suggest state transition tables in which a state is assigned to characters according to the rules of a selected language (Office Action, page 5, lines 19 and 20). The Office Action relies on the teaching of Hetherington2 to allegedly cure the above-noted deficiencies in the teaching of Hetherington.

The teaching of Hetherington2 is directed to a method of processing free-format data stored in a computing system. For example, the teaching of Hetherington2 is directed to

methods of processing free-format data, such as an address, which contains both numbers and text, by analyzing each element of the free-format data, the relation of each element to other elements within the free-format data, and the "attributes" (e.g., the street name, the street number, and the town name) of the data.

The teaching of Hetherington2 has nothing to do with methods, computer-readable mediums, or systems for forming complex characters or rules associated with forming complex characters of a selected language. Further, the teaching of Hetherington2 has nothing to do with a method of converting inputted text (e.g., English) into a syllabary symbol or ideograph (e.g., Japanese) as disclosed in the teaching of Hetherington.

Applicants respectfully submit that one of ordinary skill in the art would not have been motivated to combine the teachings of Hetherington and Hetherington2 given that the two references have nothing to do with each other. The only similarities in Hetherington and Hetherington2 noted by Applicants is that both Hetherington and Hetherington2 fail to teach or suggest each of the 14 claim features of Applicants' claimed invention embodied in independent claims 1, 14, 16, 17 and 18 as described above. Consequently, even if the combination of Hetherington and Hetherington2 were deemed proper, the combined teaching of Hetherington and Hetherington2 fails to teach or suggest Applicant's claimed invention. Since the combined teaching of Hetherington and Hetherington2 fails to teach or suggest Applicants' claimed method recited in independent claim 1, the combined teaching of Hetherington and Hetherington2 cannot make obvious claims 3-5, which depend from Applicants' independent claim 1 and recite additional claim features.

For at least the reasons given above, Applicants respectfully submit that the combined teaching of Hetherington and Hetherington2 does not make obvious Applicants' claimed invention embodied in dependent claims 3-5. Accordingly, Applicants respectfully request withdrawal of this rejection.

II. New Claims 19-22:

New claims 19-22 depend from independent claims 1, 14, 16 and 18 described above. Applicants respectfully submit that new claims 19-22 are allowable over the art of record for at least the reasons given above with regard to independent claims 1, 14, 16 and 18. Support for new claims 19-22 may be found in at least the following locations: page 9, lines 19-22; page 10, line 19 to page 11, line 14; and page 18, lines 20-27 (claims 19-22).

III. Conclusion:

For at least the reasons given above, Applicants submit that claims 1-22 define patentable subject matter. Accordingly, Applicants respectfully request allowance of these claims.

No additional fees are believed due; however, the Commissioner is hereby authorized to charge any deficiency, or credit any overpayment, to Deposit Account No. 13-2725.

Should the Examiner believe that anything further is necessary to place the application in better condition for allowance, the Examiner is respectfully requested to contact Applicants' representative at the telephone number listed below.

Respectfully submitted,
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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:	
Jurion et al.	Art Unit: **2176**
Serial No.: **09/345,195**	Examiner: **Singh, R.**
Filed: **June 30, 1999**	M&G Docket No.: 60001.0101US01/ MS181071.1
For: **METHOD AND SYSTEM FOR CHARACTER SEQUENCE CHECKING ACCORDING TO A SELECTED LANGUAGE**	

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MARKED UP VERSIONS OF CLAIMS ACCOMPANYING APPLICANTS' NOVEMBER 08, 2002 AMENDMENT AND RESPONSE

Applicants provide the following marked up versions of the claims, which were amended in Applicants' November 08, 2002 Amendment and Response filed in response to the August 08, 2002 Office Action. In the amendments below, [brackets] are used to show where terms were removed from the claims, while underlines are used to show where terms were added to the claims.

In the Claims

The following amendments were made to the claims:

1. (Amended) A method of checking a sequence of input characters according to one or more rules of a selected language, comprising the steps of:

receiving a first character;

determining whether the first character may begin a valid sequence of characters according to the rules associated with the selected language;

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James D. Withers - Reg. No. 40,376

if the first character may begin a valid sequence of characters according to rules associated with the selected language, accepting the first character for display; and

if the first character may not begin a valid sequence of characters according to rules associated with the selected language, prohibiting accepting the first character for display.

3. (Amended) The method of Claim [1] 2, wherein the step of determining whether the second character may be appended to the first character according to rules associated with the selected language includes the steps of:

in a state transition table, assigning a first state to the first character according to the rules associated with the selected language;

assigning a second state to the second character according to the rules associated with the selected language;

determining whether the state transition table includes a state transition from the first state to the second state; [and]

if the state transition table includes a state transition from the first state to the second state, determining the second character may be appended to the first character according to the rules associated with the selected language; and

if the state transition table does not include a state transition from the first state to the second state, determining the second character may not be appended to the first character according to the rules associated with the selected language.

6. (Amended) The method of Claim [1] 2, wherein the step of appending the second character to the first character includes the step of combining the first and second characters according to the rules associated with the selected language to form a single complex character.

7. (Amended) The method of Claim [1] 2, wherein the step of prohibiting appending the second character to the first character includes the step of prohibiting the display of the second character with the first character on a display screen; [,] and

wherein the step of appending the second character to the first character includes the step of displaying the second character with the first character on the display screen.

10. (Amended) The method of Claim [1] 2, wherein the second character is a simple character from the selected language.

14. (Amended) A computer-readable medium on which is stored a computer program for checking a sequence of input characters according to one or more rules of a selected language, the computer program comprising instructions, which when executed by a computer, perform the steps of:

receiving a character;

determining whether the character may be appended to a previous character to form a sequence of characters according to [the] rules associated with the selected language;

if the character may be appended to the previous character according to the rules associated with the selected language, appending the character to the previous character to form a sequence [or] of characters according to the rules associated with the selected language; and

if the character may not be appended to the previous character according to the rules associated with the selected language, prohibiting appending the character to the previous character.

15. (Amended) The [method] computer-readable medium of Claim 14, further comprising the steps of:

determining whether the sequence of characters is a complete sequence in accordance with the rules associated with the selected language;

if the sequence of characters is a complete sequence of characters according to the rules associated with the selected language prohibiting appending additional characters to the sequence of characters.

16. (Amended) A method of checking a sequence of input characters according to one or more rules of a selected language, comprising the steps of:

receiving an input character;

if the character is not associated with the selected language, displaying the character;

if the character is associated with the selected language, determining whether the character may be displayed as a single character according to the rules of the selected language;

if the character may not be displayed as a single character according to the rules of the selected language, determining whether the character may be appended to one or more additional characters to form a valid sequence of characters according to the rules of the selected language;

if the character may not be appended to one or more additional characters to form a valid sequence of characters, discarding the character; and

if the character may be appended to one or more additional characters to form a valid sequence of characters, displaying the character.

17. (Amended) A method of establishing [the] a sequence validation context of a sequence of characters comprising a complex character, comprising the steps of:

determining [the] a maximum number of characters that may comprise a valid sequence of characters according to the rules of a selected language;

beginning with [the] a last simple character of a sequence of characters, determining whether the last character is valid as a complete sequence of characters comprising a complex character,

if the last character of the sequence of characters is valid as a complete sequence of characters comprising a complex character, then returning [the] a context of the [input] last character as a context for a complex character;

if the [input] last character of a sequence of characters is not valid as a complete sequence of characters comprising a complex character, then determining whether a combination of the last character and [the] a character input immediately to the left of the last character is valid as a complete sequence of characters comprising a complex character,

if the combination of the last character and the character input immediately to the left of the last character is valid as a complete sequence of characters comprising a complex character, then returning a context for the combination as the context for a complex character;

if the combination is not valid as a complete sequence of characters comprising the complex character, then determining whether the combination combined with [the] a next character to the left of the combination is valid as a complete sequence of characters

comprising a complex character, and if not, then creating subsequent combinations of characters by adding one character at a time [additional characters input] to the left of the last subsequent combination until the maximum number of characters that may comprise a valid sequence have been combined to form a sequence of characters that may be checked for validity as a complete sequence of characters comprising a complex character; and

if [any said] one of the subsequent [combination] combinations of characters [are] is valid as a complete sequence of characters comprising a complex character according to the rules of the selected language, then returning a context for [said any said] the one subsequent combination as the context for a complex character.

18. (Amended) A system for checking a sequence of input characters according to one or more rules of a selected language, comprising:

a computer program module operative

to receive a first character;

to determine whether the first character may be the first character of a sequence of characters according to the rules associated with the selected language;

to receive a second character;

to determine whether the second character may be appended sequentially to the first character according to the rules associated with the selected language;

to append the second character sequentially to the first character if the second character may be appended to the first character according to the rules associated with the selected language; and

to prohibit appending the second character to the first character if the second character may not be appended to the first character according to the rules associated with the selected language.

New claims 19-22 were added as shown in the Amendment and Response.

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